

Listing of the Claims:

Claim 1 (original): A method for use in analyzing associations in the order of transactions, the method comprising

loading data from the transactions into a database system, where the data includes an entry for each transaction and the transactions are grouped into groups;
ordering the transactions within each group; and
performing an analysis of the groups of transactions to find associations in the order of the transactions in the groups.

Claim 2 (original): The method of claim 1 wherein the data for each transaction includes a time stamp related to a time that the transaction occurred and wherein ordering the transactions comprises

numbering the transactions based on the time stamps included in the data for the transactions.

Claim 3 (original): The method of claim 2 wherein numbering the transactions comprises

numbering the transactions in order from the transaction having the earliest time stamp to the transaction having the latest time stamp.

Claim 4 (original): The method of claim 1 wherein loading the data from the transactions into the database system comprises

parsing the data for each transaction into fields in the database system; and
identifying one of the fields as a group identifier field where a group identifier for each transaction is stored.

Claim 5 (original): The method of claim 4 wherein loading the data from the transactions into the database system further comprises

identifying one of the fields as an item identifier field where an item identifier for each transaction is stored.

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Claim 6 (original): The method of claim 1 wherein performing the analysis comprises performing an affinity analysis.

Claim 7 (original): The method of claim 1 wherein loading data from the transactions into the database system comprises

parsing the transaction data into fields in a base table in the database system;
identifying one of the fields as a group identifier field where a group identifier for each transaction is stored;

identifying one of the fields as an item identifier field where an item identifier for each transaction is stored;

ordering the transactions in each group of transactions comprises concatenating an order number to the item identifier for each transaction;

performing the analysis comprises

building one or more support tables for one or more item identifiers with concatenated order number; and

calculating support, confidence and lift by joining the support tables.

Claim 8 (original): The method of claim 7 wherein building the one or more support tables comprises

counting the transactions containing various combinations of item identifiers with concatenated order number and dividing the count by a total number of groups to obtain a support for each of the combinations.

Claim 9 (original): The method of claim 7 wherein building the one or more support tables comprises

for each item identifier with concatenated order number, counting the transactions containing the same item identifier with concatenated order number and computing the support by dividing the count by a total number of groups and storing the item identifier with concatenated order number and the support in a first support table.

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Claim 10 (original): The method of claim 9 wherein building the one or more support tables further comprises

building a second base table by selecting transactions from the first base table that include an item identifier corresponding to an item identifier and concatenated order number having a support more than a predetermined value.

Claim 11 (original): The method of claim 10 wherein building the one or more support tables further comprises

counting the transactions in the second base table containing various combinations of item identifiers with concatenated order number and dividing the count by a total number of groups in the second base table to obtain a support for each of the combinations.

Claim 12 (original): The method of claim 10 wherein building the one or more support tables further comprises

counting the transactions in the second base table containing combinations of two specified item identifiers with concatenated order number and dividing the count by a total number of transactions in the second base table to obtain a support for each of the combinations; and

storing the item identifiers and computed support in a two item support table.

Claim 13 (original): The method of claim 10 wherein building the one or more support tables further comprises

counting the transactions in the second base table containing combinations of N specified item identifiers with concatenated order number and dividing the count by a total number of transactions in the second base table to obtain a support for each of the combinations; and

storing the item identifiers and computed support in an N item support table.

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Claim 14 (original): A method for use in analyzing associations in the order of transactions, the method comprising

loading data from the transactions into a database system, where the data includes an entry for each transaction and wherein loading the data comprises grouping the transactions into groups;

selecting sessions of transactions belonging to the same group and corresponding to a single session;

ordering the transactions within each session; and

performing an analysis of the sessions of transactions to find associations in the order of the transactions in the sessions.

Claim 15 (original): The method of claim 14 wherein each entry includes a time stamp related to a time that the transaction occurred and selecting comprises selecting entries with time stamps lying in a predetermined range.

Claim 16 (original): The method of claim 15 wherein ordering comprises numbering the selected entries based on their respective time stamps.

Claim 17 (original): The method of claim 16 wherein numbering comprises numbering the selected entries from the earliest to the latest.

Claim 18 (original): The method of claim 16 wherein numbering comprises numbering the selected entries from the latest to the earliest.

Claim 19 (original): The method of claim 16 wherein numbering comprises numbering the selected entries based on their respective distance in time from a reference time.

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Claim 20 (original): A computer program, stored on a tangible storage medium, for use in analyzing associations in the order of electronically stored transactions, the program comprising executable instructions that cause a computer to
load data from the transactions into a database system, where the data includes an entry for each transaction and the transactions are grouped into groups;
order the transactions within each group; and
perform an analysis of the groups of transactions to find associations in the order of the transactions in the groups.

Claim 21 (original): The computer program of claim 20 where the program further comprises executable instructions that cause a computer to
select sessions of transactions belonging to the same group and corresponding to a single session.

Claim 22 (original): The computer program of claim 21 where each entry includes a time stamp related to a time that the transaction occurred and where, in selecting sessions, the computer
selects entries with time stamps lying in a predetermined range.

Claim 23 (original): The computer program of claim 20 where, in loading data from the transactions, the computer
parses the transaction data into fields in a base table in the database system;
identifies one of the fields as a group identifier field where a group identifier for each transaction is stored;
identifies one of the fields as an item identifier field where an item identifier for each transaction is stored;
in ordering the transactions in each group of transactions, the computer
concatenates an order number to the item identifier for each transaction; and
in performing the analysis, the computer

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builds one or more support tables for one or more item/identifiers with concatenated order number; and
calculates support, confidence and lift by joining the support tables.

Claim 24 (original): A database system for use in analyzing associations in the order of transactions, the database system comprising
a massively parallel processing system comprising
one or more nodes;
a plurality of CPUs, each of the one or more nodes providing access to one or more CPUs;
a plurality of virtual processes each of the one or more CPUs providing access to one or more virtual processes;
each virtual process configured to manage data stored in one of a plurality of data-storage facilities;
a parsing engine configured to parse transaction data and store the parsed transaction data in a table that is distributed across two or more data-storage facilities, where the data includes an entry for each transaction and the transactions are grouped into groups;
a database-management component configured to operate on the table to order the transactions within each group; and
perform an analysis of the groups of transactions to find associations in the order of the transactions in the groups.

Claim 25 (original): The database system of claim 24 where the database-management component is configured to
select sessions of transactions belonging to the same group and corresponding to a single session.

Claim 26 (original): The database system of claim 25 where each entry includes a time stamp related to a time that the transaction occurred and where, in selecting sessions, the database management system is configured to
select entries with time stamps lying in a predetermined range.

Claim 27 (original): The database system of claim 24 where, in loading data from the transactions, the database management system is configured to
parse the transaction data into fields in a base table in the database system;
identify one of the fields as a group identifier field where a group identifier for each transaction is stored;
identify one of the fields as an item identifier field where an item identifier for each transaction is stored;
order the transactions in each group of transactions comprises concatenating an order number to the item identifier for each transaction; and
in performing the analysis, the database management system is configured to
build one or more support tables for one or more item identifiers with concatenated order number; and
calculate support, confidence and lift by joining the support tables.